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(71)Applicant : NIPPON SANZO CORP

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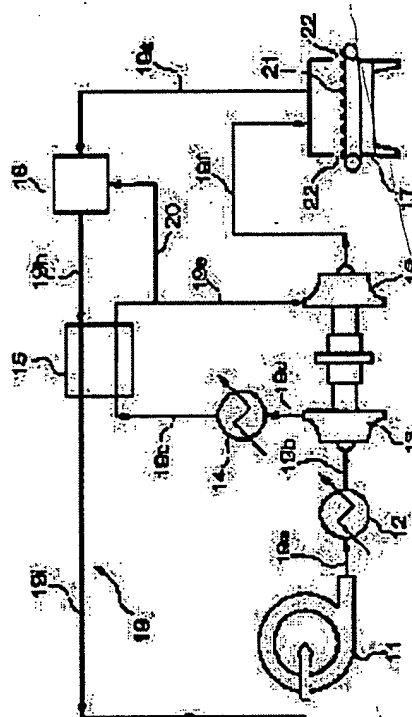
(72)Inventor : SHINDO MASAHIRO  
ISHII TAKAMITSU  
TAKAIKE AKIRA

## (54) APPARATUS AND METHOD FOR PRODUCING LOW TEMPERATURE GAS

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide an apparatus and a method for producing low temperature gas in which energy loss is reduced, cold production efficiency is increased with simplified construction of the apparatus, and the cost and installation space are reduced, and further continuous operation is easily achieved.

SOLUTION: Circulation gas is compressed with a compressor 11 and compression heat is removed, and then it is raised in pressure with a booster 13 and pressure rise heat is removed, and further the circulation gas is heat exchanged with low temperature circulation gas through a cold recovery heat exchanger 15 for its cooling. Cold is produced through heat insulation expansion with an expansion turbine 16, and the low temperature circulation gas after cooling an article 21 to be cooled with the produced cold is raised in pressure through heat exchange in the cold recovery heat exchanger 15 and is then circulated to the compressor 11. A water fraction solidification component in the low temperature circulation gas after used for the cooling is removed with a collection member of dehumidification means 18, and the circulation gas before the expansion is guided to the dehumidification means 18 to blow off the water fraction solidification component of the collection member.



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